VERSION WITH MARKINGS TO SHOW CHANGES MADE

22. (NEW) A method for non-contact parallel dispensing of fluids onto a substrate for forming a library of materials comprising the steps of:

a) providing an apparatus for non-contact dispensing of a fluid onto a substrate for forming a library of at least four different materials having a chemical gradient across said substrate including:

a plurality of parallel hydrophilic capillaries, each dimensioned for drawing a liquid therein in a volume less than about 10 microliters;

a hydrophobic sheath sealingly adjoining each of said capillaries and defining an interface therewith for resisting flow of said liquid into each said capillary beyond said interface;

a conduit upstream of said sheath associated with a manifold and being connected with said sheath; and

a source of a pressure pulse for ejecting, via said manifold, fluids that are drawn into said capillaries;

b) drawing a liquid from a liquid source into said capillaries substantially entirely by capillary action;

c) stopping the flow of said liquid substantially at said interface and prior to reaching said upstream conduit;

d) aligning said capillaries with a predetermined location on said substrate; and

e) applying a pressure pulse for ejecting fluids drawn into said capillaries simultaneously onto regions of said substrate for defining a library of materials without contacting said substrate with said capillary.

23. (NEW) The method of claim 22, wherein said dispensing apparatus is mounted on a robotic arm.

24. (NEW) The method of claim 22, wherein said sheath is maintained in place by heat shrinking.

25. (NEW) The method of claim 23, wherein said capillaries are each dimensioned for dispensing an amount of about 10 to about 500 nL.

26. (NEW) The method of claim 25, wherein said capillaries are polyimide coated fused silica, said upstream conduit is stainless steel, and said sheath is PTFE.